

REMARKS

INTRODUCTION:

In accordance with the foregoing, claim 1 has been amended, and claim 16 has been added. No new matter is being presented, and approval and entry are respectfully requested. Support for the amendment can be found, e.g., at FIGS. 1 and 3, page 8, lines 23-25, and page 11, lines 1-3, of the subject Specification.

Claims 1, 4, and 16 are pending and under consideration.

REJECTIONS UNDER 35 U.S.C. §103:

In the Office Action, at page 2, the Examiner rejected claims 1 and 4 under 35 U.S.C. §103(a) as being unpatentable over Ito et al. (Japan 2002-206542 – hereinafter Ito), in view of Mizutani et al., (U.S. 5,375,933 – hereinafter Mizutani). The reasons for the rejection are set forth in the Office Action and therefore not repeated. Applicants traverse this rejection and respectfully request reconsideration.

Amended, independent claim 1 recites: "...wherein on a first one of the opposite annular end faces, the tool reference plane is defined by a first step recessed from the first annular end face of the raceway member such that a peripheral surface of the first step is located a first radial distance from an inner peripheral surface of the outer raceway member or an outer peripheral surface of the inner raceway, the first step being uncovered by the insulating layer and positioned between the first annular end face and the inner peripheral surface of the outer raceway member or the outer peripheral surface of the inner raceway member, and on the remaining opposite annular end face, there is defined either a second step recessed from the remaining annular end face of the raceway member, such that a peripheral surface of the second step is located the first radial distance from the inner peripheral surface of the outer raceway member or the outer peripheral surface of the inner raceway, the second step being uncovered by the insulating layer and positioned on a peripheral edge corresponding to a position of the tool reference plane on the first annular end face, or a chamfered portion uncovered by the insulating layer and positioned on a peripheral edge corresponding to a position of the tool reference plane on the first annular end face, such that an intersection between the chamfered portion and the remaining annular end face is located the first radial distance from the inner peripheral surface of the outer raceway member or the outer peripheral surface of the inner raceway."

Initially, the Examiner asserts that the surface 2a of Ito corresponds to the claimed tool reference plane. Applicants respectfully disagree. Surface 2a of Ito is not defined on an annular end face of a raceway member.

Additionally, even though Ito appears to disclose an embodiment with races having chamfered ends (FIGS. 7 and 8), those chamfers are disposed on outer peripheral surfaces of the outer race 2 and inner peripheral surfaces of the inner races 1 (i.e., those that might engage a shaft).

In contrast, in a non-limiting embodiment, the subject Specification discloses an outer raceway member 3 having an annular step 8 on annular end face 3b. Additionally, in one embodiment (FIG. 3), a corresponding annular step 8 is disposed on annular end face 3c, and in another embodiment (FIG. 1), a chamfered surface 3d is disposed in annular end face 3c. These combinations of features ease the thermal spraying process of the insulating layer 6, for the following reasons.

If the outer raceway member 3 has the annular step 8 on each of the end faces 3b and 3c, as shown in Fig. 3, the outer raceway member 3 is left-right symmetrical. Because of the symmetry, in other words, because the area of the end face 3b and the area of the end face 3c are equal, the insulating layer 6 can be thermal-sprayed to occupy the same area on both of the end faces 3b and 3c regardless of a left-right orientation as the outer raceway member 3 is placed on a thermal spraying machine during the thermal spraying of the insulating layer 6. Thus, the thermal spraying process is simplified.

If the outer raceway member 3 has, as shown in Fig. 1, the chamfered surface 3d on the annular end face 3c, the chamfered surface 3d has an outer diameter on the annular end face 3c that is generally equal to the outer diameter of the step 8. In other words, the area of the annular end faces 3b and 3c are equal, and thus, the insulating layer 6 can be thermal-sprayed to occupy the same area on both of the end faces 3b and 3c regardless of a left-right orientation as the outer raceway member 3 is placed on a thermal spraying machine during the thermal spraying of the insulating layer 6. Thus, the thermal spraying process is simplified. Additionally, the embodiment with the chamfered surface 3d is advantageous in that the chamfered surface 3d requires a less complicated machining process than does the annular step 8.

Whereas if, as shown in Fig. 9 of Ito, the outer raceway member has the single step (only on one of the end faces) a problem may arise. Namely, if the outer raceway member 2 of Ito (having the single step on the end face 5I) is mistakenly placed on a thermal spraying machine during the thermal spraying of the insulating layer 5 with the left-right orientation reversed, then the portion of insulating layer 5 that is supposed to be sprayed on the end face 5I (the location of

the step) is sprayed on the remaining end face 5H, thus leaving a portion of end face 5H uncovered by the insulating-layer. And correspondingly, the portion of insulating layer 5 that is supposed to be sprayed on the end face 5H is sprayed on the end face 5I, thereby undesirably covering an innermost radial surface of the step. In such a case, the portion of insulating layer 5 undesirably sprayed on the step would subsequently have to be removed, thereby requiring an additional machining process.

Applicants respectfully submit that neither Ito nor Mizutani, either alone or in combination, disclose or suggest the recited features of independent claim 1.

Thus, Applicants respectfully submit that independent claim 1 patentably distinguishes over the cited art, and should be allowable for at least the above-mentioned reasons. Further, Applicants respectfully submit that claim 4, which depends from independent claim 1, should be allowable for at least the same reasons as claim 1, as well as for the additional features recited therein.

NEW CLAIM:

Applicants respectfully submit that for at least similar reasons as those stated in the section regarding the rejection under 35 U.S.C. §103, new claim 16 patentably distinguishes over the cited art and should be allowable.

CONCLUSION:

In accordance with the foregoing, Applicants respectfully submit that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the cited art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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